

To: Ruhl, Christopher[Ruhl.Christopher@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; EOC Public Information[EOC_Public_Information@epa.gov]; Gray, David[gray.david@epa.gov]; Guria, Peter[Guria.Peter@epa.gov]
From: Grantham, Nancy
Sent: Sun 8/30/2015 4:24:20 PM
Subject: FW: Durango Herald: Not all mines are created the same

From: Carey, Curtis
Sent: Sunday, August 30, 2015 10:37 AM
To: Weigel, Greg; Grantham, Nancy; Smith, Paula
Subject: Durango Herald: Not all mines are created the same

‘Not all mines are created the same’

Minerals in La Plata Mountains mines not equal to San Juan Mountains mines

By Jonathan Romeo

Herald Staff Writer

When the sickly orange plume of mine runoff barreled through downtown Durango on Aug. 5, it reignited a longstanding problem: contamination leaking into national waterways from inactive or abandoned mines.

Colorado officials estimate 230 such mines are leaking toxic waste statewide, and the Environmental Protection Agency said that adds up to about one Gold King Mine spill every two days.

But to the west, the La Plata River is a different story. Though surrounded by a number of old mining sites, runoff there does not pose the same risk to the natural habitat as the wastewater that seeps out of the mountains north of Silverton.

“It’s really important to recognize not all mines are created the same,” said David Gonzales, a professor of geosciences at Fort Lewis College.

La Plata Canyon does have a rich history of mining, with Mayday, Bessie G. and Copper Hill Glory Hole among the more notable sites. But even the largest mine in La Plata Canyon pales in comparison to the networks found in the Silverton Caldera, namely Gold King, Red and Bonita, Mogul and expansive Sunnyside.

It is the minerals in the mountains that surround the La Plata River that are far more responsible for lack of pollution in the waters. Simply put, the canyons there are not made up of the same stuff that creates acid rock drainage.

Gonzales said when sulfite minerals – commonly pyrite – interacts with air and water, the sulfur is converted to sulfate. That makes acid, which can attack rocks over time and cause the release of toxic metals, such as cadmium, copper, lead, arsenic, manganese and zinc.

The product is acid rock drainage, which has been called a number of things in the wake of the Gold King Mine spill: wastewater, mine runoff, toxic spill, orange sludge.

The San Juan Mountains have high concentrations of these sulfite minerals – as evidenced by Red Mountain’s color – that produce acid rock drainage naturally through fractures and fissures.

But when miners came along and tunneled through the mountains, they opened large and easy ways for water to flow, picking up sulfites along the way and allowing for large drainage into waterways. The result has been disastrous: Cement Creek, a tributary of the Animas, is never expected to be hospitable to aquatic life, and trout populations in the upper Animas continue to decline in alarming rates.

In the La Plata Mountains, sulfites are present, but nowhere near the same concentration levels as the San Juans. In the areas where the mineral can be found in larger masses near Gibbs Peak and the Copper Hill Glory Hole mine, the pH in the water returns to normal by the time it reaches the La Plata River.

“Nature has taken care of the problem just by allowing the water to interact with different natural systems – rocks, bogs, vegetation – that help remediate it naturally,” Gonzales said.

A report from the Colorado Geological Survey in 2000, as well as a 1993 thesis from Northern Arizona University, confirms pH levels at the high-elevation concentration zone are about four to five – that of beer or coffee – and then return to the normal measure of seven. Gonzales said the ecosystem there is not under the same level of pressure as the Animas.

“You see a trickle here and there, but the discharge of water in most mines are low,” Gonzales said. “You don’t see the discharge of water on the same scale. That has to do with snow, groundwater, things of that sort.”

Gonzales added that none of the mines in the La Plata Mountains were plugged with bulkheads, as was the case with the massive mining networks at Sunnyside, which some officials believe was responsible for the eventual collapse at Gold King.

That practice, which Animas River Stakeholders Group coordinator Peter Butler called an “experiment,” allowed for a massive buildup of acid rock drainage that more often than not results in a major blowout.

“When you have a high concentration like that, nature has a hard time taking care of it,” Gonzales said. “The volume of stuff released from Gold King never would have happened naturally, unless something naturally plugged it up.”

jromeo@durangoherald.com